

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

Claims 1-13 (canceled).

14. (currently amended): A correcting device to compensate for perturbations of ~~the~~a polarization distribution over ~~the~~a cross section of a light beam in an optical system, comprising a correcting member which, in a given arrangement, comprises:

- a first birefringent correcting element having two substantially parallel ~~first and~~ substantially planar surfaces, including a first surface and a further first surface, and a substantially constant first thickness in a direction perpendicular to the ~~first surfaces~~ of the first element,
- a second birefringent correcting element having two substantially parallel ~~second~~ and substantially planar surfaces, including a second surface and a further second surface, and a substantially constant second thickness in a direction perpendicular to the ~~second surfaces~~ of the second element,

wherein at least one of the ~~first surface, and the further first surface, the second surface, and the further second surface~~ first surface, and the further first surface, the second surface, and the further second surface is reprocessed so as to create local thickness

variations Δd by which the perturbations of the polarization distribution are compensated at least approximately, and

wherein the arrangement, the first and the second thicknesses and birefringence properties of the first and the second correcting ~~element~~elements are selected so that ~~their~~ birefringent effects within the correcting member cancel each other out at least approximately, when the local thickness variations Δd are neglected.

15. (withdrawn): The correcting device of Claim 14, wherein the correcting elements consist essentially of a same material.

16. (withdrawn and currently amended): The correcting device of Claim 15, wherein the first surface and the second ~~surfa~~essurface are reprocessed complementarily with one another so that ~~the~~a total thickness of all the correcting elements of the correcting member is constant over the cross section.

17. (withdrawn): The correcting device of Claim 16, wherein the local thickness variation Δd required for the perturbation compensation at a particular point is distributed among the first and the second correcting element so that the thickness of the first correcting element is reduced by $\Delta d/2$ at the particular point and the thickness of the second correcting element is increased by $\Delta d/2$.

18. (canceled).

19. (withdrawn and currently amended): The correcting device of claim 14, wherein the first correcting element and the second correcting element have birefringence axes that are mutually rotated by 90°.

20. (withdrawn and currently amended): The correcting device of claim 14, wherein at least one of the correcting ~~element~~elements has a surface which is additionally reprocessed so as to reduce wavefront errors due to the thickness variations.

21. (withdrawn and currently amended): The correcting device of Claim 14, further comprising a second correcting member comprising further correcting elements, wherein the correcting elements of the one correcting member have birefringence axes that are rotated by 45° relative to birefringence axes of the further correcting elements of the second correcting member.

22. (original): A projection objective for a microlithographic exposure apparatus, comprising the correcting device of Claim 14.

23. (original): The projection objective of Claim 22, wherein the correcting device is arranged at least approximately in a pupil plane of the projection objective.

24. (currently amended): The projection objective of Claim 23, further comprising a catadioptric part which comprises an imaging mirror, and wherein the correcting device is arranged in immediate vicinity of anthe imaging mirror, ~~which is contained in a catadioptric part of the projection objective.~~

Claims 25-26 (canceled).